

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior listings and versions

1 to 65. (canceled).

66. (currently amended) A polynucleotide, wherein the polynucleotide is a member of a library of polynucleotides, the members of the library comprising a vector and an insert, wherein the insert sequences consist essentially of comprising polynucleotides that correspond to accessible regions of cellular chromatin, wherein the polynucleotides are library is obtained according to claim 3 the method of:

(a) contacting cellular chromatin with a probe, wherein reaction of the probe with cellular chromatin results in polynucleotide cleavage at accessible regions of cellular chromatin;

(b) deproteinizing the cleaved chromatin of step (a);

(c) digesting the deproteinized chromatin of step (b) with a nuclease to generate a collection of polynucleotide fragments; and

(d) selectively cloning polynucleotide fragments comprising one end generated by probe cleavage.

67. (currently amended) A library comprising a plurality of libraries each library comprising polynucleotides according to claim 66. ~~the polynucleotides in each library corresponding to accessible regions of cellular chromatin, wherein~~

~~(a) the polynucleotides in each library are obtained according to the method of claim 3;~~
and

~~(b) the polynucleotides in different libraries correspond to accessible regions in different chromatin samples.~~

68. (currently amended) The ~~libraries~~ library of claim 67, wherein the ~~different~~ cellular chromatin ~~samples are~~ is obtained from cells at ~~different stages~~ a particular stage of development.

69. (currently amended) The ~~libraries~~ library of claim 67, wherein the ~~different~~ cellular chromatin ~~samples are~~ is obtained from cells of a particular tissue. ~~different tissues~~.

70. (currently amended) The ~~libraries~~ library of claim 67, wherein the ~~different~~ cellular chromatin ~~samples are~~ is obtained from ~~healthy and~~ diseased cells.

71. (currently amended) The ~~libraries~~ library of claim 67, wherein the ~~different~~ cellular chromatin ~~samples are~~ is obtained from infected ~~and uninfected~~ cells.

72 to 124. (canceled).

125. (new): The polynucleotide of claim 66, wherein, in step (a), the probe is a nuclease.

126. (new) The polynucleotide of claim 125, wherein the nuclease is a restriction enzyme.

127. (new) The polynucleotide of claim 126, wherein the probe comprises a plurality of restriction enzymes.

128. (new) The polynucleotide of claim 66, wherein, in step (c), the nuclease is a restriction enzyme.